SANUPS

POWER MANAGEMENT SOFTWARE

SANUPS
SOFTWARE

SANUPS
SOFTWARE

COMPACT
disc
DIGITAL DATA

MATU-007 E7316V

SANYO DENKI

SANYO DENKI

Enhanced Electrical Power Management

UPS is adopted to protect valuable systems and data from power failures and other electrical power problems used various situations.

However, it is impossible to provide an unlimited power since UPS battery capacity is limited.

When the system did not normally shut down at power outage, this may cause trouble on connection devices.

"SANUPS SOFTWARE" UPS Management Software automatically shuts down the system in case of power failures, and stops UPS. This software allows smooth and safe management of data and systems.

Monitoring of the UPS status, scheduled operation, status monitoring via networks, control, and other functions can work flexibly.

UPS Management Software
SANUPS SOFTWARE

This software automatically shuts down the system and stops the UPS when a failure occurs in the commercial power supply. Smooth power management is still ensured even when the UPS is connected to many computers. Also, control of the power supply and automatic operation of the computer using the schedule function can work.

UPS Monitoring Software
SANUPS IT Monitor Manager

It is a software application that monitors, manages, and controls multiple target devices connected to a network in a consolidated way.

UPS Option
LAN Interface Card

This interface card allows UPS units to directly connect to LAN.
It monitors and reports on power supply status, takes quick action in case of a power failures and other malfunction, and informs the system administrator via E-mail on any power problems. Support for SSH (Secure SHell).* Ambient temperature and humidity can be measured by connecting the corresponding sensors.
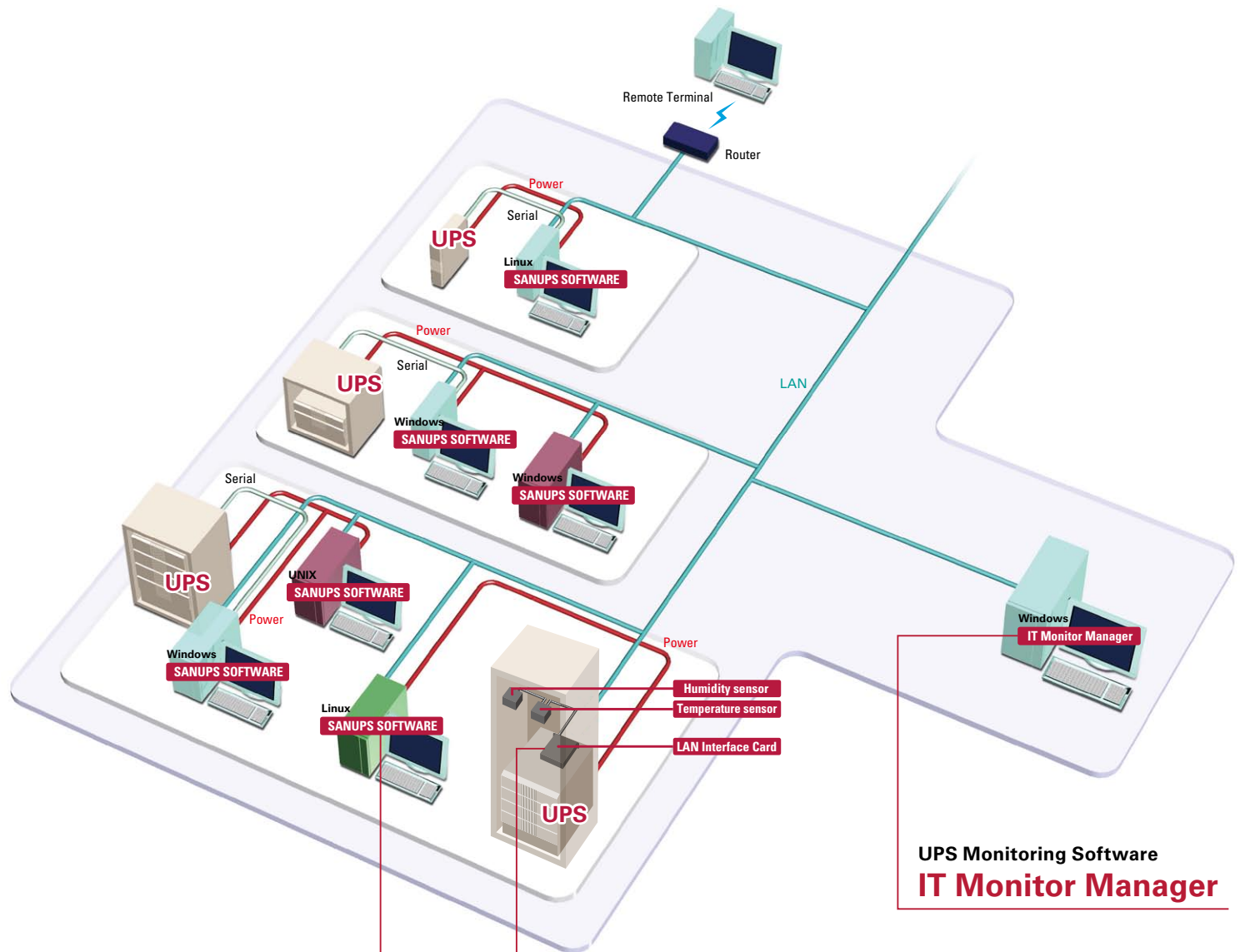
*SSH (Secure SHell) is a program, generally used on Linux computers, to allow logging in to a second computer via a network and working commands and other operations. Since data transmitted over the network is encrypted, a sequence of operations work safety even over the Internet. Support for SSH Version: SSH Version 2

When shutting down devices connected via SSH, the time taken to log in using the SSH verification method may differ. When using host verification or public key verification, it may take longer to log in.

for the Entire System

Remote Terminal

Router

Power

Serial

UPS

Linux
SANUPS SOFTWARE

Power

Serial

UPS

Windows
SANUPS SOFTWARE

Windows
SANUPS SOFTWARE

LAN

Serial

UPS

UNIX
SANUPS SOFTWARE

Power

Windows
SANUPS SOFTWARE

Linux
SANUPS SOFTWARE

Power

Humidity sensor

Temperature sensor

LAN Interface Card

UPS

Windows
IT Monitor Manager

UPS Monitoring Software
IT Monitor Manager

UPS Options
LAN Interface Card

Functions

Web browser support functions, UNIX and Linux support functions
Strengthened network support functions, E-mail transmission functions
Strengthened security, Temperature and Humidity Monitor

UPS Management Software
SANUPS SOFTWARE

2

UPS Management Software

SANUPS SOFTWARE

This software automatically shuts down the system and stops the UPS when a failure occurs in the commercial power supply. Smooth power management is still ensured even when the UPS is connected to many computers.

1 Flexible Power Supply Management

- When you set automatic start-up at power recovery, it can also be set not to automatically start-up until the battery charge reaches a pre-set amount.
- It can automatically shut down the UPS in the event of a major malfunction and overload.

2 Easy Maintenance

- Maintenance is easily done from Telnet and a Web browser, and monitoring is also easily done via E-mail.
- Battery replacement time and alarm on major malfunction is sent via E-mail to ensure the next action.
- The battery test result is sent via E-mail.

3 Multiple Interfaces

- Shutdown through Telnet connection
- Wake On LAN, SNMP, DHCP, and DNS
- Flexible UPS connection interfaces (serial, contact, and LAN)
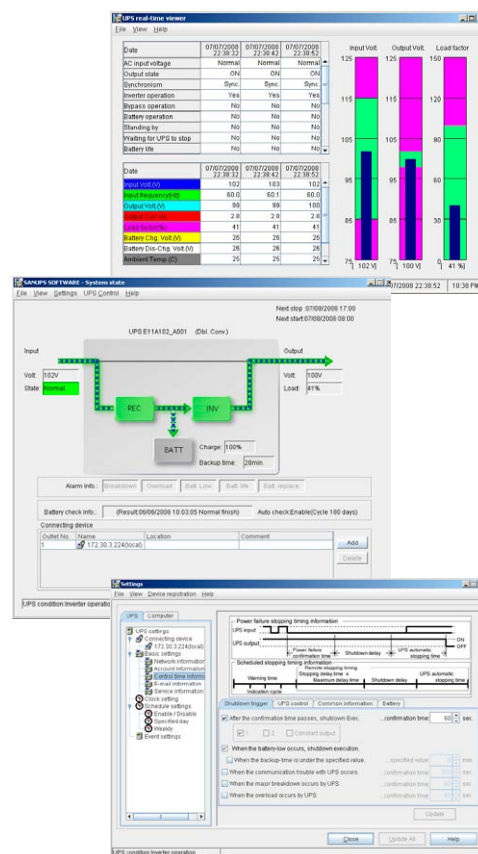
Supported Operating Systems

for Windows

Windows 2000
Windows XP (x86 / x64)
Windows Server 2003 (x86 / x64 / IA-64)
Windows Server 2003 R2 (x86 / x64)
Windows Vista (x86 / x64)
Windows Server 2008 (x86 / x64 / IA-64)
Windows Web Server 2008 (x86 / x64)
Windows Server 2008 R2 (x64)
Windows Web Server 2008 R2 (x64)
Windows 7 (x86 / x64)
Windows 8 (x86 / x64)
Windows Server 2012 (x64)

for UNIX

Solaris 8 / 9 / 10 / 11 (SPARC)
Solaris10 / 11 (x86)
AIX 5.1 / 5.2 / 5.3 / 6.1 / 7.1
HP-UX 11i v1
HP-UX 11i v2 for Itanium / v3 for Itanium

for Linux

Red Hat Enterprise Linux v.3 / v.4 / v.5 / v.6 (x86 / x64 / IA-64)
SUSE Linux Enterprise Server 9 / 10 / 11 (x86 / x64)
Turbolinux 10 Server (x86 / x64)
MIRACLE LINUX V4.0 (x86 / x64)
MIRACLE LINUX Asianux Server 3 (x86 / x64)
VMWare ESX Server 3.0 / 3.5 / 4.0 / 4.1

Model

SANUPS SOFTWARE Ver.2.0.1

Windows version
PMS40H00E (Without cable)
PMS40H00E-10 (Without cable, 10 License)
PMS40H00E-50 (Without cable, 50 License)
PMS40H00E-100 (Without cable, 100 License)
PMS40H01E (With cable)
Multi-OS version
PMS41H00E (Without cable)
PMS41H00E-10 (Without cable, 10 License)
PMS41H00E-50 (Without cable, 50 License)
PMS41H00E-100 (Without cable, 100 License)
PMS41H01E (With cable)

Automatic Computer Shutdown Functions

1. Multiple Shutdown Functions
- Computer is automatically shut down in the event of power outages and other power malfunctions.
- Computer is also shut down when major malfunction, overload, and serial transmission failure occurs.
- Type of shutdown is selectable (for Windows version only).
  ●Shutdown ●Shutdown and Automatic Computer Power down ●Standby

2. Support for Multiple Platforms
- Supports mixed different OS platforms (Windows, UNIX, and Linux) and allows to shutdown up to 50 machines.
- Regarding UNIX, Linux, and FreeBSD, shutdown control is also available by logging onto Telnet.

3. Execution of User Command
- Executes commands specified by user before shutting down the operating system.
- Application shutdown functions (command provided for Windows version only)
  Running applications* can be automatically saved and shutdown.
  *Products related to Microsoft Office 2000, XP, 2003, 2007, and 2010 (Word, Excel, PowerPoint, FrontPage, Project, and Visio)

4. Automatic UPS Start-up on Power Recovery
- Automatic UPS start-up is available at power recovery caused by power failure.
- The battery charge level can be set when the UPS is automatically restarted after power has been restored (varies depending on UPS models).
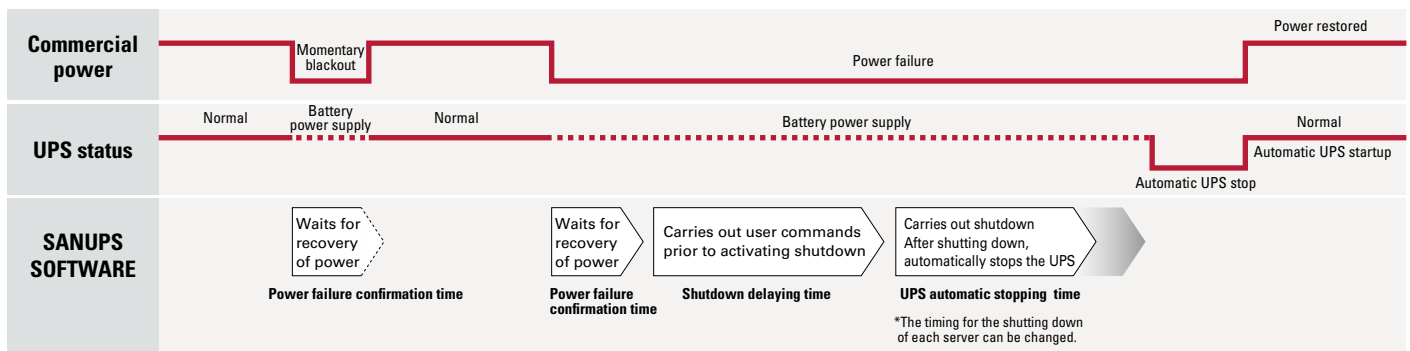- Power can be turned on for the computers that support WakeOnLAN.
  *Automatic computer startup when starting UPS power supply relies on the actual computer specifications.

5. Scheduled Operation Functions
- Scheduled operation for UPS output as ON and OFF can be done once per day.
  The computer is automatically shut down before UPS is stopped.
  *Automatic computer startup at starting up UPS power supply relies on the actual computer specifications.

■ Shutdown Sequence

Commercial power		Momentary blackout		Power failure				Power restored
UPS status	Normal	Battery power supply	Normal		Battery power supply			Normal
							Automatic UPS stop	Automatic UPS startup
SANUPS SOFTWARE		Waits for recovery of power		Waits for recovery of power	Carries out user commands prior to activating shutdown	Carries out shutdown After shutting down, automatically stops the UPS		
		Power failure confirmation time		Power failure confirmation time	Shutdown delaying time	UPS automatic stopping time		

*The timing for the shutting down of each server can be changed.

Status Monitoring

1. UPS Status Display
- Input and output power status and battery status can be monitored in real time
- UPS status is recorded as archive and displayed at each event such as power outages, and at specified time intervals.

2. Support for Web Browsers and Telnet
- Remote status check and setting change can be done through a web browser and Telnet terminal.
  *The web browser must be Java-enabled.

3. SNMP Agent Functions
- The function supports RFC1628 standard UPS-MIB. Status of UPS is monitored from SNMP manger.

4. E-mail Transmission and Reception Functions
- Any changes (power failures etc) occurring in UPS can be notified via E-mail.
- UPS status can be acquired by sending a request mail

5. Sound Notification (Only applies to Windows version)
- A sound file can be executed when displaying message screens at power failures.
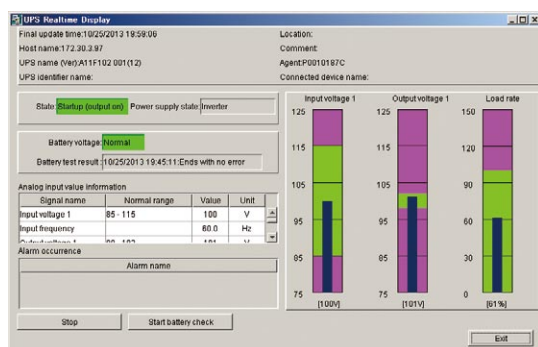
UPS Monitoring Software

IT Monitor Manager

This software combines monitoring, managing and control of multiple networked Sanyo Denki UPSs.

Centralized monitoring of multiple devices

■ Uses SNMP (Simple Network Management Protocol) to remotely monitor and manage up to 500 Sanyo Denki UPSs.

■ Displays real-time device status.

Use the real-time display function to check the status of each device. Control is also available.

■ Record and display the history of states and measured values collected within a specified confirmation interval.
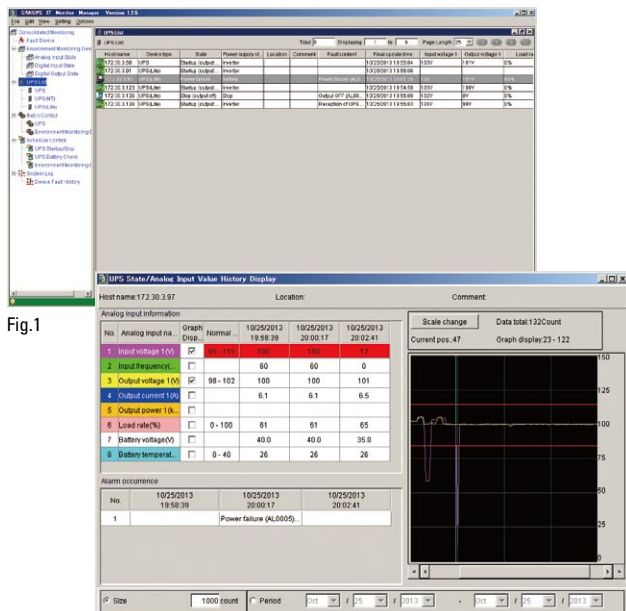
Fig.1

Fig.2

Centrally confirm the status of devices. Icon color changes according to device status (Fig.1). Use the status and measurement value history display function to view device status history. The history can also be saved as a file (Fig.2).

■ Device fault history is saved and displayed in a system log.
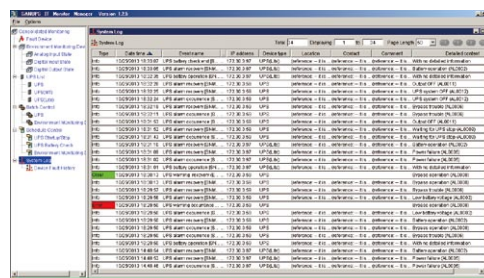
Check log information such as fault occurrences and recoveries, and SNMP traps.

■ When a device fault occurs, you can be notified by a pop-up message or e-mail. A batch file can also be executed on the server.

Supported Operating Systems

for **Windows**

Windows NT 4.0
Windows 2000
Windows XP (x86 / x64)
Windows Server 2003 (x86 / x64)
Windows Server 2003 R2 (x86 / x64)
Windows Vista (x86 / x64)
Windows Sever 2008 (x86 / x64)
Windows Sever 2008 R2 (x64)
Windows 7 (x86 / x64)

Model

English Version	**PMS34C00E**
Chinese Version	**PMS34C00C**

LAN Interface Card

This interface card allows UPS units to directly connect to LAN.

It monitors and reports on power supply status, takes quick action in case of a power failure and other malfunction, and informs the system administrator via E-mail on any power problems. Support for SSH (Secure SHell).

Line up

Model: **PRLANIF003/004**

Compared with our conventional products, this model provides enhanced security and compatibility with redundant power supply systems.

Model: **PRLANIF005/006**

This model includes the functions of the PRLANIF003/004, and adds the capability to monitor UPS ambient temperature and humidity utilizing temperature and humidity sensors.

Model

LAN Interface Card

Model	Supported UPS
PRLANIF003-US	A11H/A11J/E11A/A11F102/A11F152
PRLANIF004-US	A11F202/A11F302
PRLANIF005-US	A11H/A11J/E11A/A11F102/A11F152
PRLANIF006-US	A11F202/A11F302

Temperature sensor, Humidity sensor (for **PRLANIF005-US, PRLANIF006-US**)

Model	Supported UPS
PRLANSN001	Temperature sensor
PRLANSN002	Humidity sensor

1 Flexible Power Supply Management

▨ Computer auto-shutdown function

- Computers can be automatically shut down in the event of power failure.
- Not only on power failures, but shutdown can also be performed under conditions of serious trouble or overload.
- Compatible with mixed Windows-Unix/Linux OS environments, and up to 50 units can be shut down.
- Multiple shutdown methods:

(1) Shutdown via network implementing "SANUPS SOFTWARE" UPS management.

(2) For Unix, Linux and FreeBSD, shutdown by SSH (Secure SHell) or Telnet login. ("SANUPS SOFTWARE" installation not needed.)

(3) If shutdown control cannot be provided via network, a serial port can be used (only one port).

▨ UPS automatic restart when power restored

- UPSs that were automatically shut down by power failure can be automatically restarted when power is restored.
- Automatic computer restarting when the UPS restarts depends on computer specifications. Computers that do not restart by restored power may be restarted using the Wake On LAN function or ring signal.

▨ Scheduled operation function

- Daily UPS output on/off operations can be scheduled. (The computer automatically shuts down when the UPS is turned off.)

2 Status monitor

- Input and output power and battery states can be checked in real time.
- Record and view UPS status history at regular intervals and when events such as power failures occur.
- Confirm UPS status and change settings remotely using a Web browser* or SSH/Telnet.
  - * The Web browser is required to support Java applets.
- Monitor UPS status with an SNMP manager. Support RFC1628's standard UPS-MIB and private MIB.
- Notifications of UPS status changes including power failures, battery replacement warnings, serious fault alarms and battery test results can be sent by email.
- You can also obtain UPS status in response to email requests.
- When an event occurs, the event log can be sent to a syslog server.

3 System management

- NTP (Network Time Protocol) support
  Automatic time synchronization eliminates the need to have someone periodically set the clocks.
- Setting value download/upload functions
  Setting values can be downloaded and setting changes uploaded by FTP.
- Test function
  Without cutting power you can confirm WS script execution, email sending, SNMP trap sending and shutdown of connected systems.

4 High security compliance

- Supports SSL/TLS*. Data is encrypted during internet transfers for protection against information leakage by interception or spoofing.
  *SSL/TLS:Secure Socket Layer / Transport Layer Security.
- Supports SSL (Secure Socket Layer) encrypted data transfers (HTTPS, FTPS, and encrypted email). Supports the cryptographic security function of SNMPv3.

5 Redundant Power Supply System Support

- Support for redundant power systems using up to five UPS units. Ideal for building highly reliable system configurations.
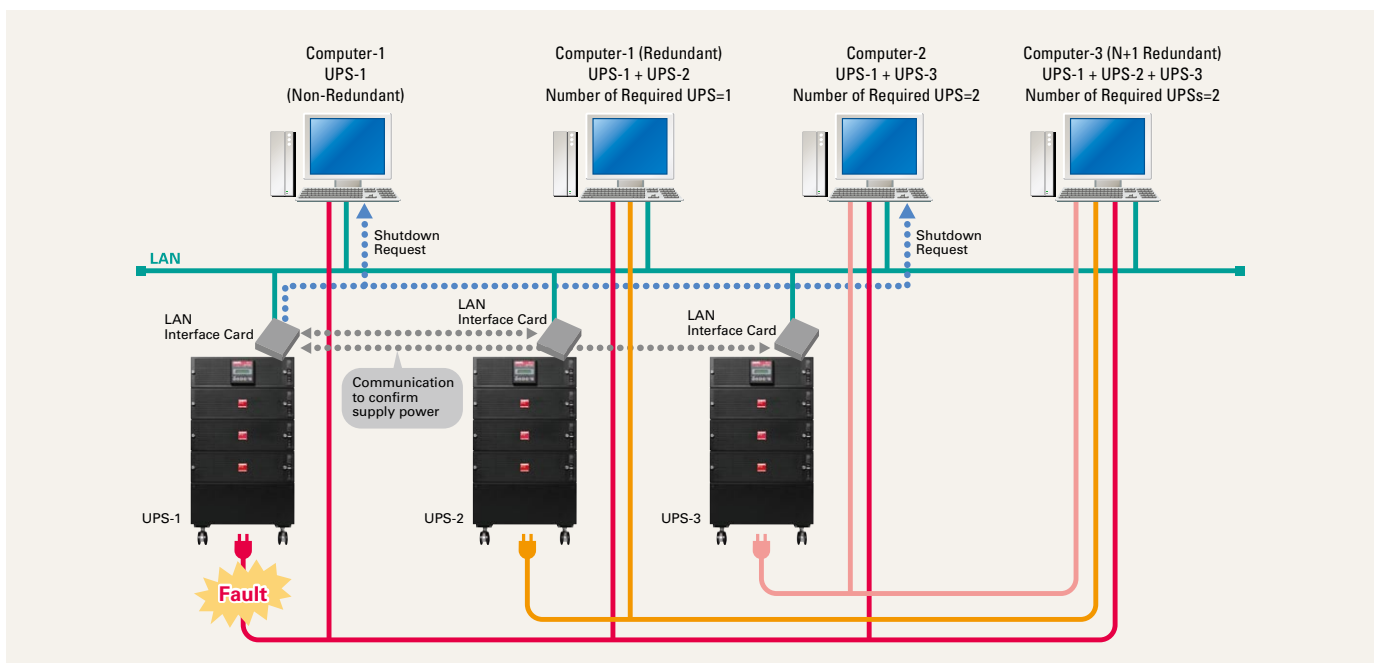

- Multiple UPSs can be set to shut down according to AND and OR conditions of each connected system.
- Other UPSs can be set to shut down when a power failure occurs at any one UPS unit.
- Multiple UPSs can be stopped together at scheduled control times.
- UPS stop requests (start, stop and reset) can be issued to synchronize multiple UPSs.

6 View Measurement Information

■ View Measurement Information
- Cumulative output power (kWh) can be stored hourly.
- Output power value information can be confirmed in a Web browser. (Output power display is available for UPSs that support it.)
- Past measurement information can be stored as hourly averages, maximum and minimum values for statistical analysis.
- Statistical information can be confirmed by Web browser.
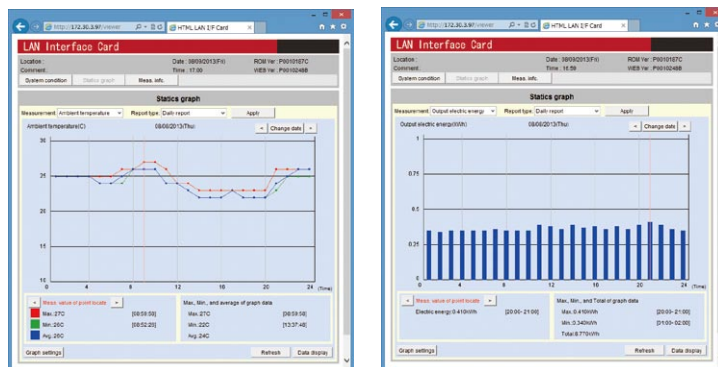
■ Monitor Measurement Deviations
- Set thresholds for load factor, ambient temperature and input voltage, to monitor for deviations from the thresholds. Also, the server computer can be shut down due to deviations from a threshold.

7 Monitors UPS ambient environment (Model: PRLANIF005-US, PRLANIF006-US)

■ Ambient temperature and humidity can be measured by the corresponding sensors installed in the UPSs. Eliminates the need for additional monitoring devices to save space.

■ Server computers can be shut down when measured temperature or humidity is abnormal.

■ Temperature and humidity statistics can be viewed graphically in daily, monthly and yearly formats. The data can also be saved for easy management.

■ Easily upgrade temperature and humidity sensors by simply connecting a LAN cable.

UPS

LAN Interface Card

Temperature or Humidity sensor

LAN cable

Max. 16 sensors
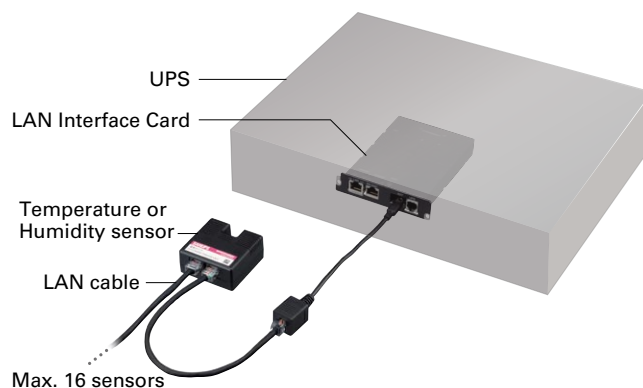
UPS Option

Contact Interface Card

This interface card for Sanyo Denki UPSs provides no-voltage contacts for external transfer of UPS signals.

Model	Supported UPS	Remarks
PRCONIF001-US	A11H/A11F102/A11F152/E11A	Terminal box type
PRCONIF002-US	A11F202/A11F302	
PRCONIF003-US	A11H/A11F102/A11F152/E11A	D-sub 15 pin type
PRCONIF004-US	A11F202/A11F302	

Pattern 1　**Serial/dry contact signal connection 1**

For backing up a single personal computer with a UPS with a serial port or a UPS with contact output.

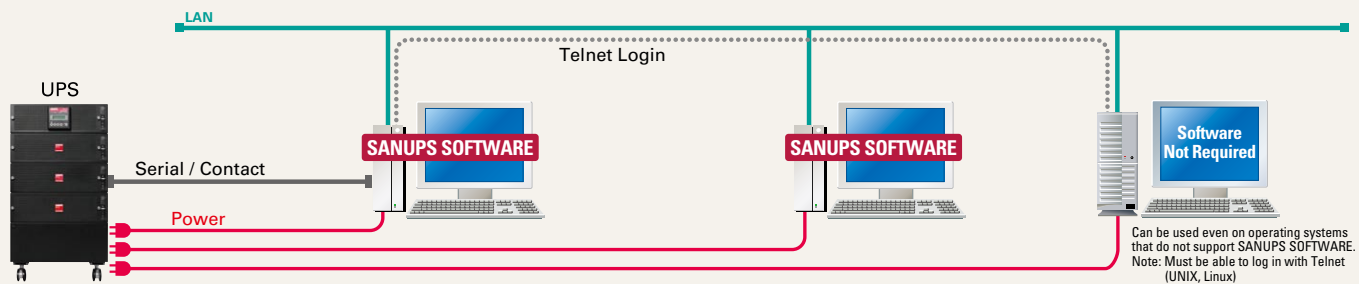■ Operable without network environment.

■ It can be used for a firewall.

SANUPS SOFTWARE

Serial / Contact

Power
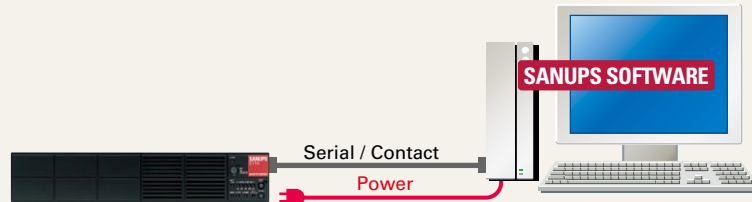
Pattern 2　**Serial/dry contact signal connection 2**

For backing up multiple personal computers with a UPS with a serial port or a UPS with contact output.

■ A low-cost UPS control system can be realized.

Caution: If the personal computer connected with a UPS with serial contact signal connection is not in operation, monitoring and control of other personal computers cannot be performed.

LAN

Telnet Login

UPS

SANUPS SOFTWARE　　SANUPS SOFTWARE　　Software Not Required

Serial / Contact

Power

Can be used even on operating systems that do not support SANUPS SOFTWARE.
Note: Must be able to log in with Telnet (UNIX, Linux)

Pattern 3　**LAN connection 1**

For backing up a virtual machine with a UPS.

■ SANUPS SOFTWARE can be installed in a host and guest OS.
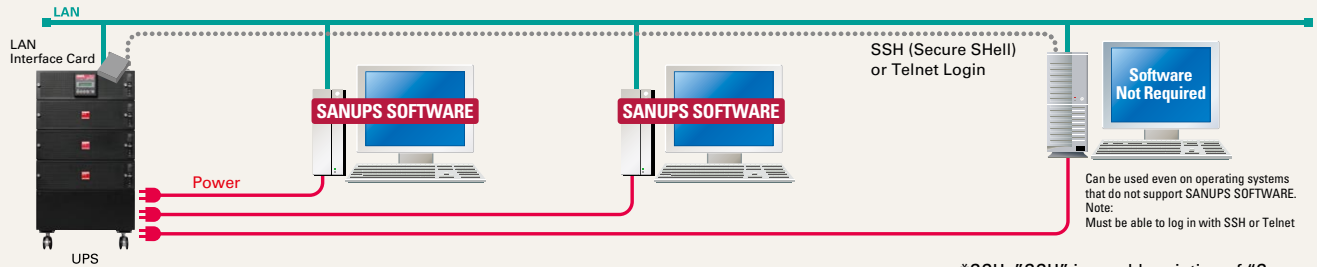　Shutdown is possible by SSH or Telnet login.
　Host: VMware ESX Server, Microsoft Hyper-V

LAN

LAN Interface Card

Virtual machine

Guest OS　Guest OS　Guest OS

SANUPS SOFTWARE　SANUPS SOFTWARE　SANUPS SOFTWARE

Host

SANUPS SOFTWARE

Power

UPS

For backing up multiple personal computers/workstations with a UPS in which a LAN Interface Card (optional) is incorporated.

■ Applicable to a clustering system.

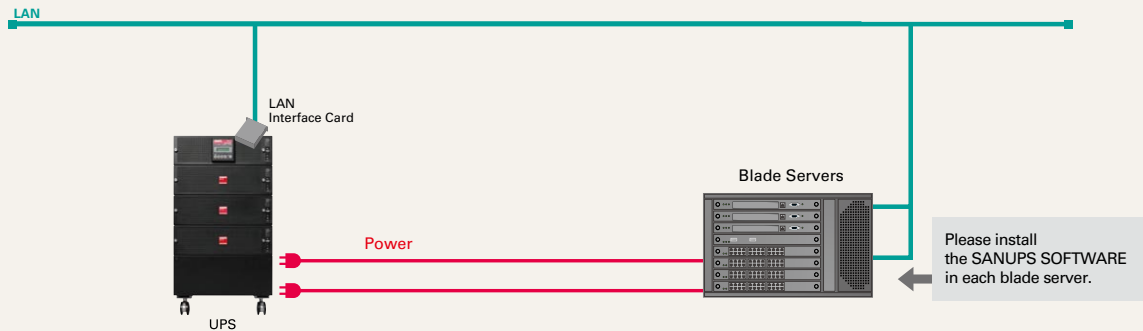■ Remote ON/OFF control is possible.

Can be used even on operating systems that do not support SANUPS SOFTWARE.
Note:
Must be able to log in with SSH or Telnet

*SSH: "SSH" is an abbreviation of "Secure SHell".

For backing up a blade server with a UPS in which a LAN Interface Card optional is incorporated.

■ Up to 50 blade can be shut down.

Please install the SANUPS SOFTWARE in each blade server.

Examples of UPS General Management Use

Management Software
■ IT Monitor Manager (Option)
■ SNMP Manager*
■ Web Browser*

*These need to be set up ahead of time in order to be used.

Managing Computer

UNIX/Linux

Cluster System

Computer*/Workstation

Hard Disk

Computer/Workstation

Blade Servers
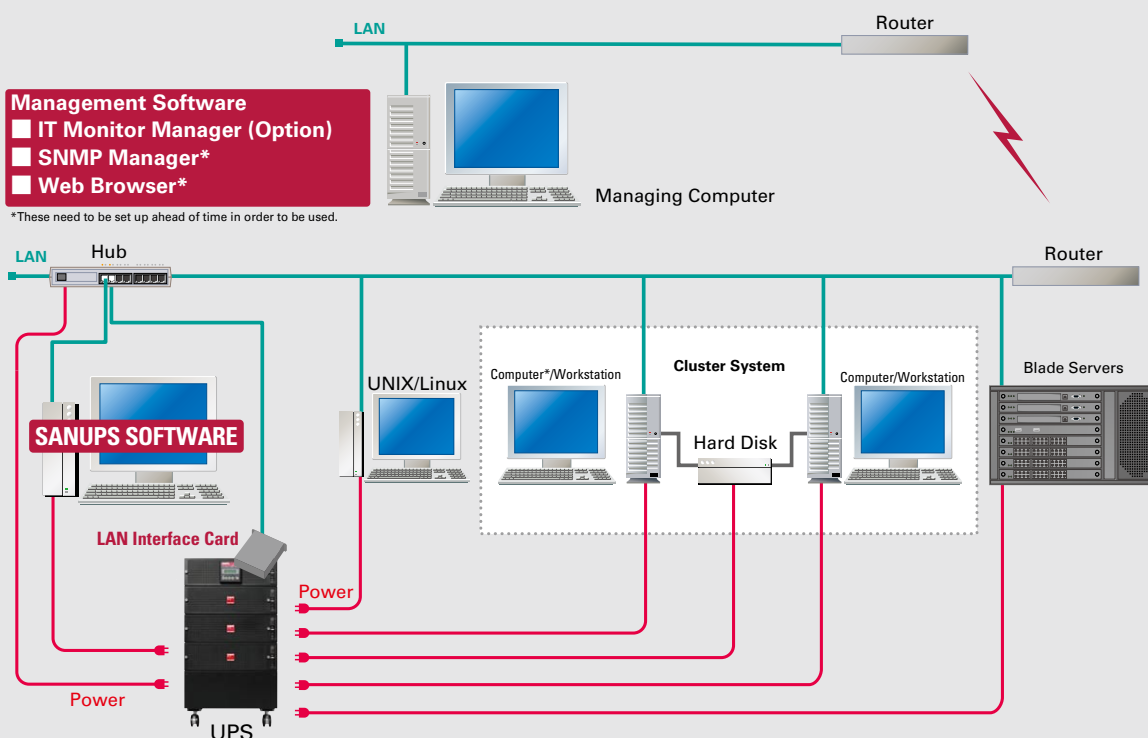
Notes when investigating use of this product in your applications

●Before starting installation, assembling and use, read the "Operation Manual" carefully and use the product correctly in your applications.
●When you are going to use this product in the following application, the special considerations are required for operation, running, maintenance and control. Be sure to consult with our company as a part of your investigations.
(a) Medical equipment and other equipment that are related directly to human life.
(b)Train or elevator that can give injury to human body.

(c) Socially and publicly important computer systems
(d) And other equipment that are related to safety of human life and that can affect severe effects on maintenance of public functions.
●For the applications that undergo vibration such as vehicles, ships and transportation facilities, please consult with our company.
●Never modify this product or give additional processing to this product.
●For the installation and maintenance work, please consult with our company or with specialized company.

※For any inquiry or consultation, please contact our sales representative.